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George Donohue: Maglev line is a Trojan horse. Just fix the current train system. | COMMENTARY

By GEORGE DONOHUE
CAPITAL GAZETTE | FEB 20, 2021



There is an old engineering prediction: “When you are a hammer, the whole world looks like a nail.”

The superconducting magnetic levitation train is a solution looking for a problem.

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Why are we still considering the maglev's system's additional \$40 billion investment to save 40 minutes? Fixing the Acela roadbed will provide most of the benefits at much lower cost.

My research center at George Mason University sponsored a systems engineering evaluation in 2019 comparing the Japanese maglev, the German Velaro D High Speed Rail and the new Amtrak French Alstom, Avelia Liberty system alternatives. The other transportation options currently available from Washington, D.C., to New York City take over three to four hours travel time vs. an estimated one hour and 15 minutes for the maglev.

The Federal Railroad Administration and Maryland Department of Transportation Draft Environmental Impact Study is open for comment. I agree with the study on the need for increased high-speed-rail system capacity, just not the magnetic levitation alternative. In my opinion, this study is a red herring study of a loss-leading advertisement for a public-private-sector project (Washington to Baltimore) of a much larger Washington to New York City purchase. As such is could be compared to a Trojan Horse. It will not be a commercial success.

To my knowledge, all passenger rail travel alternatives require government subsidies to operate. I know of no major profit-making passenger rail networks currently in operation in any country. There are only two profitable rail lines in existence: the Paris-Lyon line and the Tokyo-Osaka line. Most passenger rail systems require government subsidies to maintain operations, and a new high-speed-rail system should be expected to call upon the government for support. Thus, it is a public policy issue.

Amtrak has already signed with the French company Alstom to receive 28 trainsets of a new design known as the Avelia Liberty. These trains are assembled in the US

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delivery by the end of 2022 and will offer

frequency along the route.

The major remaining roadblock to achieving this speed is the aging roadbed network that needs to be replaced. Almost a third of Amtrak delay problems are associated with inadequate roadbed infrastructure maintenance. Amtrak has included needed infrastructure investments in their budget.

The Avelia Liberty offers technical increases in both speed and capacity. Computer simulations show average operating travel time to be approximately one hour and 55 minutes between Washington and New York. This city-center to city-center travel time is faster and more comfortable than by air.

The increase in capacity is attributed to increases in both vehicle and maximum train size. The current arrangement of 20 Acela Express trains running each direction each weekday gives the maximum weekday capacity of approximately 11,000 passengers per day.

The new Avelia Liberty trainset maximum daily capacity will be over 14,000 passengers per day. If the Avelia Liberty is upgraded to its maximum trainset size, the new maximum daily capacity will be almost 20,000 passengers per day.

The maglev study analysis assumes that they will capture 94% of these passengers after we will have invested over \$25 billion on the Amtrak investments.

We used a utility function developed by Georgia Tech which considers seven categories that are evaluated based on 27 characteristics. The marginal utility comparison favored the Acela option (at ~ \$25 billion) over the superconducting magnetic levitation system. The high capital cost of maglev of approximately \$65 billion (Washington to Baltimore alone at \$10 billion) and its system immaturity.

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As a former acquisition executive for the Federal Aviation Administration, I understand politically popular development programs with a rosy promise of benefits. This extra investment will never achieve a positive return-on-investment for the taxpayers.

Fix the Acela roadbed network. It will be much cheaper!



George Donohue is a professor emeritus of systems engineering at George Mason University and the president of the South County Democratic Club. The opinions expressed are his own. (Courtesy photo)

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